

# SEIZURES

MODULE: CRITICAL INCIDENTS

TARGET: ANAESTHETISTS, INTENSIVISTS, EMERGENCY, ACUTE PHYSICIANS & FOUNDATION DOCTORS

**BACKGROUND:**

Management of seizures and status epilepticus is a core skill common to the acute medical specialties. Management should include consideration of underlying causes and treatment should follow established algorithms. If airway protection is required then an anaesthetic technique which shows evidence of limiting increases in intracranial pressure should be undertaken.

## RELEVANT AREAS OF THE ANAESTHETIC CURRICULUM

IG_BS_07 AM_BS_04	Demonstrates effective pre-oxygenation, including correct use of the mask, head position and clear explanation to the patient.
IG_BS_08	In respect of intravenous induction: <ul style="list-style-type: none"> <li>• Makes necessary explanation to patient</li> <li>• Demonstrates satisfactory preparation of drugs for induction of anaesthesia</li> <li>• Demonstrates proper technique in injecting drugs for induction of anaesthesia</li> <li>• Manages the cardiovascular and respiratory changes associated with induction of general anaesthesia</li> </ul>
IG_BS_10 AM_BS_05	In respect of airway management: <ul style="list-style-type: none"> <li>• Demonstrates optimal patient position for airway management.</li> <li>• Manages airway with mask and oral/nasopharyngeal airways</li> <li>• Demonstrates hand ventilation with bag and mask</li> <li>• Able to insert and confirm placement of a Laryngeal Mask Airway</li> <li>• Demonstrates correct head positioning, direct laryngoscopy and successful nasal/oral intubation techniques</li> <li>• Confirms correct tracheal tube placement</li> <li>• Demonstrates correct use of bougies</li> <li>• Demonstrates correct securing and protection of LMAs/tracheal tubes during movement, positioning and transfer</li> </ul>
CI_BK_12	Convulsions
CI_BS_01	Demonstrates good non-technical skills such as: [effective communication, team-working, leadership, decision-making and maintenance of high situation awareness]
CI_BS_02	Demonstrates the ability to recognise early a deteriorating situation by careful monitoring
CI_BS_03	Demonstrates the ability to respond appropriately to each incident listed above
CI_BS_04	Shows how to initiate management of each incident listed above
CI_BS_05	Demonstrates ability to recognise when a crisis is occurring
CI_BS_06	Demonstrates how to obtain the attention of others and obtain appropriate help when a crisis is occurring
3.1	Manages the care of the critically ill patient with specific acute medical conditions
3.6	Recognises and manages the patient with neurological impairment
NA_IS_07	Demonstrates the ability to resuscitate, stabilise and transfer patients with brain injury safely.

## INFORMATION FOR FACULTY

### LEARNING OBJECTIVES:

- Differential diagnosis of the fitting patient
- Management of seizures
- Limiting surges in intracranial pressure

### SCENE INFORMATION:

- Location: Resus

This scenario takes place in ED resus. It can form the basis of a joint training scenario for Foundation, ED, ICU, Anaesthetic or ACCS trainees. The initial patient assessment could be performed by a Foundation or ED trainee, who would be expected to call for anaesthetic or ICU support to secure the airway prior to transfer to the CT scanner.

### EQUIPMENT & CONSUMABLES

Manikin – On resus trolley.  
Checked anaesthetic machine  
Stocked Airway trolley  
- Laryngoscopes (2 x Macintosh)  
- ET Tubes (Various Sizes)  
- OP, NP and Advanced Supraglottic airways (iGels, LMAs)  
Simulated Anaesthetic drugs  
Plan D equipment, either:  
- Scalpel and #6 COETT  
- Ravussin needle and Manujet (or local equipment)  
Self-inflating Bag-valve-mask  
Portable ventilator/anaesthetic machine

### PERSONS REQUIRED

Anaesthetic/ACCS junior trainee  
Resus nurse  
Anaesthetic Senior Trainee  
ED Trainee (Optional)

#### PARTICIPANT BRIEFING: (TO BE READ ALOUD TO PARTICIPANT)

##### Foundation/ED/ACCS Trainee:

- This patient has been brought in by ambulance with a severe headache. The patient is in ED Resus. Please perform the initial assessment of the patient and proceed as you feel appropriate.

##### Anaesthetic Trainee:

- You are the on-call anaesthetic/ITU SHO. You have been called to see a patient in ED Resus.

#### 'VOICE OF MANIKIN' BRIEFING:

Underlying pathology is a subarachnoid haemorrhage, but history is intentionally vague with several possibilities (including other types of intracranial bleeds, meningitis or encephalitis etc).

You are initially drowsy. Speech starts to slow and slur. After a few minutes the situation deteriorates with falling consciousness and development of seizures.

##### Headache History:

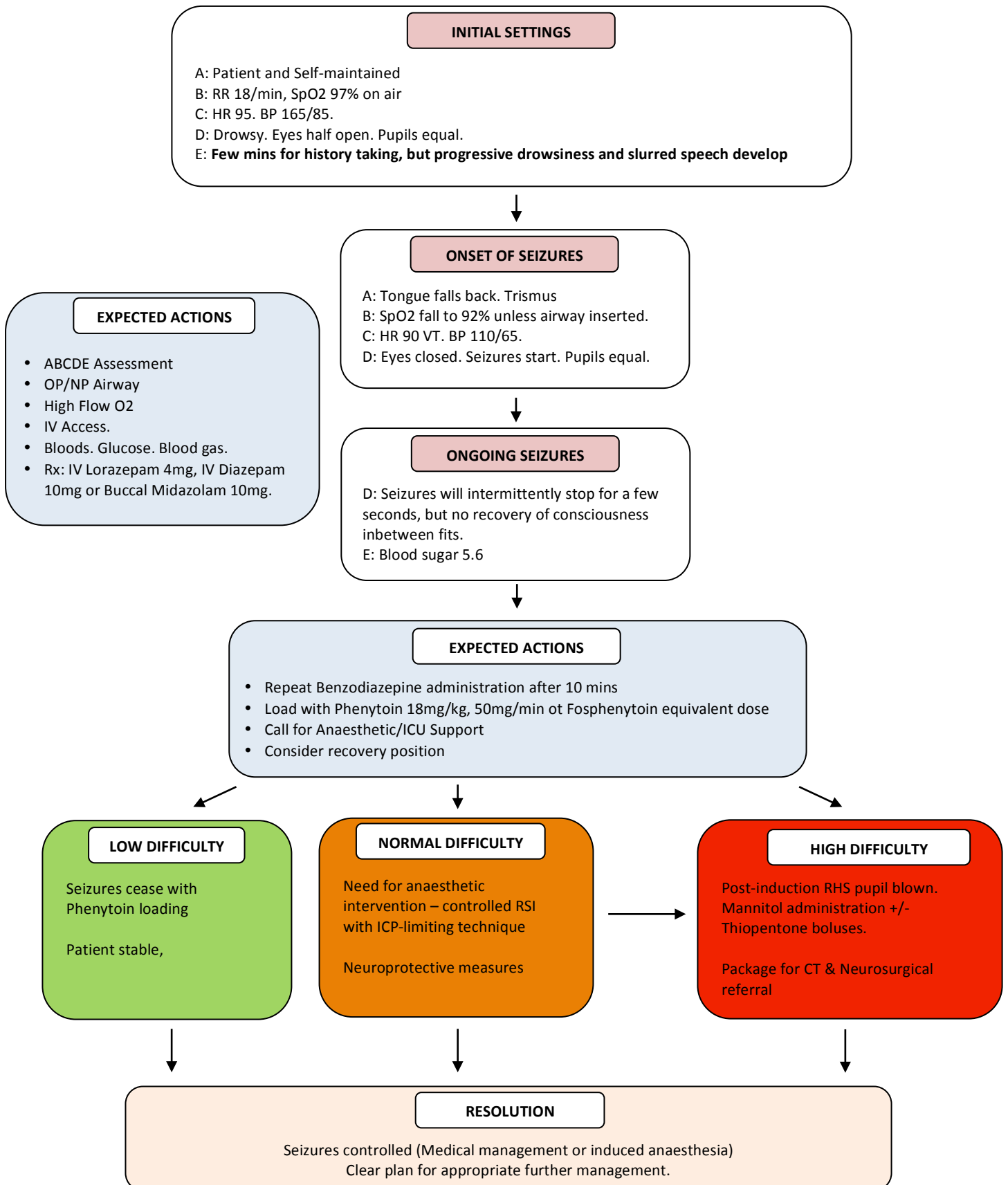
- Headache for a couple of hours, onset over about 5 mins.
- Pain around whole head but worse at the back of the head. Also goes down neck and into shoulders.
- Nausea and vomiting for last 1 hour.
- Uncomfortable in lit environment, prefer the room dim. Neck feels stiff.
- Recent cold (runny nose, fevers and shivers – mild) in the last few days.
- Fit and well usually except for high blood pressure treated with amlodipine and ramipril.
- Independent.
- No-one else in household ill.
- No previous operations. No allergies

#### OTHER IN-SCENARIO PERSONNEL BRIEFING:

##### ED Nurse

- You have basic airway skills and are a skilled assistant during intubation.

**CONDUCT OF SCENARIO**



## DEBRIEFING

### POINTS FOR FURTHER DISCUSSION:

#### Technical:

- Management of seizures in adults.
- Emergency induction in the potentially brain-injured patient
- Physiology of intracranial pressure – and limiting surges in ICP
- Principles of intra-hospital transfer

#### Non-technical:

- Situation awareness
- Prioritisation
- Leadership
- Team working and task management

### DEBRIEFING RESOURCES

SIGN Guideline 70: Diagnosis and Management of Epilepsy in Adults. Updated Oct 2005. Page 7 of quick reference guide has Status epilepticus algorithm

<http://www.sign.ac.uk/guidelines/fulltext/70/index.html>

NICE Clinical Guideline CG137: Epilepsy. Jan 2012 Page 98 onwards has a treatment algorithm for Status Epilepticus in adults. First published 2004.

<http://www.nice.org.uk/nicemedia/live/13635/57779/57779.pdf>

AAGBI Guideline: Recommendations for the Safe Transfer of Patients with Brain Injury. 2006 Aimed at safe interhospital transfer, but very relevant information for intrahospital transfer.

<http://www.aagbi.org/sites/default/files/braininjury.pdf>

## INFORMATION FOR PARTICIPANTS

### KEY POINTS:

- Differential diagnosis of the fitting patient
- Management of Status Epilepticus
- Limiting increases in intracranial pressure

### RELEVANCE TO AREAS OF THE ANAESTHETIC CURRICULUM

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### WORKPLACE-BASED ASSESSMENTS

Basic Level WBPA's	
CIB_D01	Demonstrates the emergency management of the following critical incidents in simulation: <ul style="list-style-type: none"> <li>• Convulsions</li> </ul>

#### FURTHER RESOURCES

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**PARTICIPANT REFLECTION:**

What have you learnt from this experience? (Please try to list 3 things)

How will your practice now change?

What other actions will you now take to meet any identified learning needs?



**PARTICIPANT FEEDBACK**

Date of training session:.....

Profession and grade:.....

What role(s) did you play in the scenario? (Please tick)

Primary/Initial Participant	<input type="checkbox"/>
Secondary Participant (e.g. 'Call for Help' responder)	<input type="checkbox"/>
Other health care professional (e.g. nurse/ODP)	<input type="checkbox"/>
Other role (please specify):	<input type="checkbox"/>
Observer	<input type="checkbox"/>

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I found this scenario useful					
I understand more about the scenario subject					
I have more confidence to deal with this scenario					
The material covered was relevant to me					

Please write down one thing you have learned today, and that you will use in your clinical practice.

How could this scenario be improved for future participants?  
 (This is especially important if you have ticked anything in the disagree/strongly disagree box)

## FACULTY DEBRIEF – TO BE COMPLETED BY FACULTY TEAM

What went particularly well during this scenario?

What did not go well, or as well as planned?

Why didn't it go well?

How could the scenario be improved for future participants?